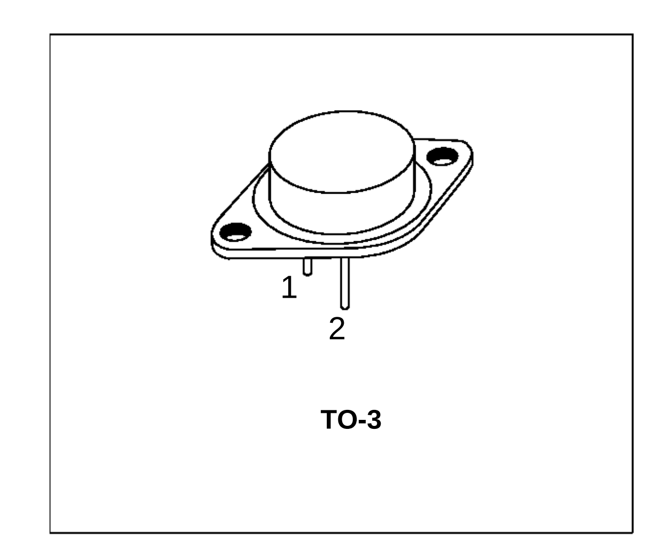


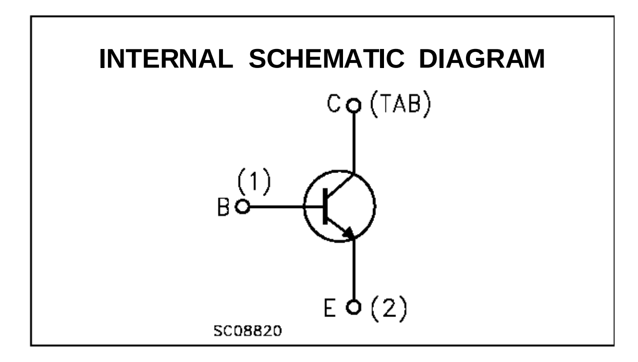
BUV61

SILICON NPN SWITCHING TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- FAST SWITCHING TIMES
- LOW SWITCHING LOSSES
- VERY LOW SATURATION VOLTAGE AND HIGH GAIN FOR REDUCED LOAD OPERATION



TO-3



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEV}	Collector-emitter Voltage (V_{BE} = -1.5V)	300	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	200	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	7	V
I_C	Collector Current	50	A
I_{CM}	Collector Peak Current	75	A
I_B	Base Current	8	A
I_{BM}	Base Peak Current	15	A
P_{Base}	Reverse Bias Base Dissipation (B.E. junction in avalanche)	2	W
P_{tot}	Total Power Dissipation at T_{case} < 25 ^oC	250	W
T_{stg}	Storage Temperature	-65 to 200	^oC
T_j	Max Operating Junction Temperature	200	^oC

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.7	$^oC/W$

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current (R_{BE} = 10Ω)	$V_{CE} = V_{CEV}$ $V_{CE} = V_{CEV}$ $T_c = 100^oC$			1 5	mA mA
I_{CEV}	Collector Cut-off Current	$V_{CE} = V_{CEV}$ V_{BE} = -1.5V $V_{CE} = V_{CEV}$ V_{BE} = - 1.5V T_C=100^{o}C			1 4	mA mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			1	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage	I_C = 0.2A L = 25 mH	200			V
V_{EB0}	Emitter-base Voltage (I_c = 0)	I_E = 50 mA	7			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 12.5A I_B = 0.625A I_C = 25A I_B = 2.5A I_C = 40A I_B = 5A I_C = 12.5A I_B = 0.625A T_j = 100^{o}C I_C = 25A I_B = 2.5A T_j = 100^{o}C I_C = 40A I_B = 5A T_j = 100^{o}C		0.65 0.4 0.6 0.5 0.5 0.75	0.9 0.9 1.2 1.2 1.5 1.9	 V V V V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 25A I_B = 2.5A I_C = 40A I_B = 5A I_C = 25A I_B = 2.5A T_j = 100^{o}C I_C = 40A I_B = 5A T_j = 100^{o}C		1.05 1.35 1.1 1.35	1.4 1.8 1.7 1.8	V V V V
di_c/d_t*	Rated of Rise of on-state Collector Current	V_{CC} = 160V R_C = 0 I_{B1} =3.75A T_j = 25^{o}C T_j = 100^{o}C	 70 60	 130 110		 A/µs A/µs
$V_{CE(2\mu s)}$	Collector Emitter Dynamic Voltage	V_{CC} = 160V I_{B1} =2.5A R_C = 6.4Ω T_j = 25^{o}C T_j = 100^{o}C		 1.3 1.8	 3 5	 V V
$V_{CE(4\mu s)}$	Collector Emitter Dynamic Voltage	V_{CC} = 160V I_{B1} = 2.5A R_C = 6.4Ω T_j = 25^{o}C T_j = 100^{o}C		 0.95 1.1	 2 3	 V V

∗ Pulsed: Pulse duration = 300 µs, duty cycle = 2 %

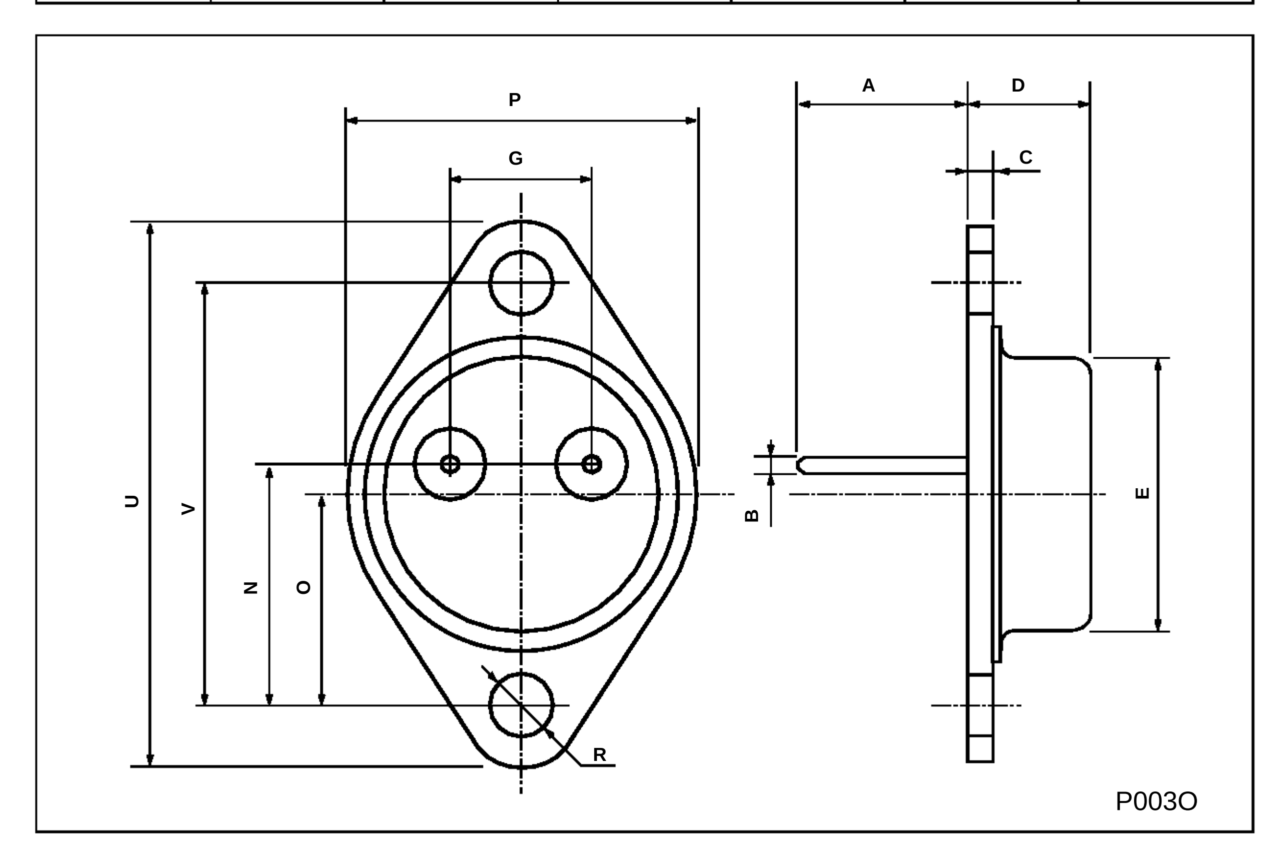
ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	RESISTIVE LOAD						
t_r	Rise Time	V_{CC} = 160V	I_C = 40A		0.55	0.7	μs
t_s	Storage Time	V_{BB} = -5V	I_{B1} = 5A		0.6	1.2	μs
t_f	Fall Time	R_{B2} = 0.5Ω	T_p = 30μs		0.07	0.3	μs
	INDUCTIVE LOAD						
t_s	Storage Time	V_{CC} = 160V	V_{clamp} = 200V		0.85	1.9	μs
t_f	Fall Time	I_C = 25A	I_B = 2.5A		0.06	0.15	μs
t_t	Tail Time in Turn-on	V_{BB} = -5V	R_{B2} = 1Ω		0.01	0.07	μs
t_c	Crossover Time	L_C = 0.32mH			0.11	0.3	μs
t_s	Storage Time	V_{CC} = 160V	V_{clamp} = 200V		1.1	2.4	μs
t_f	Fall Time	I_C = 25A	I_B = 2.5A		0.08	0.25	μs
t_t	Tail Time in Turn-on	V_{BB} = -5V	R_{B2} = 1Ω		0.02	0.15	μs
t_c	Crossover Time	L_C = 0.32mH	T_j = 100°C		0.15	0.5	μs
t_s	Storage Time	V_{CC} = 160V	V_{clamp} = 200V		1.6		μs
t_f	Fall Time	I_C = 25A	I_B = 2.5A		0.7		μs
t_t	Tail Time in Turn-on	V_{BB} = 0	R_{B2} = 2.7Ω		0.2		μs
		L_C = 0.32mH					
t_s	Storage Time	V_{CC} = 160V	V_{clamp} = 200V		2.7		μs
t_f	Fall Time	I_C = 25A	I_B = 2.5A		1		μs
t_t	Tail Time in Turn-on	V_{BB} = 0	R_{B2} = 2.7Ω		0.3		μs
		L_C = 0.32mH	T_j = 100°C				

∗ Pulsed: Pulse duration = 300 μs, duty cycle = 2 %

TO-3 (S) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	1.47		1.60	0.058		0.063
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsability for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectonics.

© 1995 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A
. . .

